

## SEQUENCE LISTING

<110> Istituto Superiore di Sanità  
National Institutes of Health

<120> COLORECTAL ANTIGEN

<130> WPP88367

<150> US 60/512,040

<151> 2003-10-15

<160> 20

<170> PatentIn version 3.3

<210> 1

<211> 1413

<212> DNA

<213> Homo sapiens

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<221> CDS

<222> (85)..(1395)

<220>

<221> misc\_feature

<222> (1180)..(1240)

<223> nucleotide sequence encoding the immunogenic peptide

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gac ctg gag cag cag gtg aag gcc cag act gat gag ata ctg tcc aag 159  
Asp Leu Glu Gln Gln Val Lys Ala Gln Thr Asp Glu Ile Leu Ser Lys  
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gat cag aag ata gcg gcc cta gag gac ctg gtg cag acc ctc cgg cca 207  
Asp Gln Lys Ile Ala Ala Leu Glu Asp Leu Val Gln Thr Leu Arg Pro  
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cac cca gcc gag gca acc ctg cag cgg cag gag gaa ctg gag acg atg 255  
His Pro Ala Glu Ala Thr Leu Gln Arg Gln Glu Glu Leu Glu Thr Met  
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tgt gtg cag ctg cag cgg cag gtc agg gag atg gag cgg ttc ctc agt 303  
Cys Val Gln Leu Gln Arg Gln Val Arg Glu Met Glu Arg Phe Leu Ser  
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gac tat ggc ctg cag tgg gtg ggc gag ccc atg gac cag gag gac tca 351  
Asp Tyr Gly Leu Gln Trp Val Gly Glu Pro Met Asp Gln Glu Asp Ser  
75 80 85

gag agc aag aca gtc tca gag cat ggc gag agg gac tgg atg aca gcc 399  
Glu Ser Lys Thr Val Ser Glu His Gly Glu Arg Asp Trp Met Thr Ala  
90 95 100 105

aag aag ttc tgg aag cca ggg gac tca ttg gcg ccc cct gag gtg gac 447  
Lys Lys Phe Trp Lys Pro Gly Asp Ser Leu Ala Pro Pro Glu Val Asp  
110 115 120

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 His Gly Glu Arg Asp Trp Met Thr Ala Lys Lys Phe Trp Lys Pro Gly  
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 130                      135                      140  
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 Lys Leu Tyr Arg Asn Gly Ile Met Met Phe Asp Gly Pro Phe Gln Pro  
 165                      170                      175  
 Phe Tyr Asp Pro Ser Thr Gln Arg Cys Leu Arg Asp Ile Leu Asp Gly  
 180                      185                      190

Phe Phe Pro Ser Glu Leu Gln Arg Leu Tyr Pro Asn Gly Val Pro Phe  
195 200 205

Lys Val Ser Asp Leu Arg Asn Gln Val Tyr Leu Glu Asp Gly Leu Asp  
210 215 220

Pro Phe Pro Gly Glu Gly Arg Val Val Gly Arg Gln Arg Met His Lys  
225 230 235 240

Ala Leu Asp Arg Val Glu Glu His Pro Gly Ser Arg Met Thr Ala Glu  
245 250 255

Lys Phe Leu Asn Arg Leu Pro Lys Phe Val Ile Arg Gln Gly Glu Val  
260 265 270

Ile Asp Ile Arg Gly Pro Ile Arg Asp Thr Leu Gln Asn Cys Cys Pro  
275 280 285

Leu Pro Ala Arg Ile Gln Glu Ile Val Val Glu Thr Pro Thr Leu Ala  
290 295 300

Ala Glu Arg Glu Arg Ser Gln Glu Ser Pro Asn Thr Pro Ala Pro Pro  
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Leu Ser Met Leu Arg Ile Lys Ser Glu Asn Gly Glu Gln Ala Phe Leu  
325 330 335

Leu Met Met Gln Pro Asp Asn Thr Ile Gly Asp Val Arg Ala Leu Leu  
340 345 350

Ala Gln Ala Arg Val Met Asp Ala Ser Ala Phe Glu Ile Phe Ser Thr  
355 360 365

Phe Pro Pro Thr Leu Tyr Gln Asp Asp Thr Leu Thr Leu Gln Ala Ala  
370 375 380

Gly Leu Val Pro Lys Ala Ala Leu Leu Leu Arg Ala Arg Arg Ala Pro  
385 390 395 400

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Ser Pro Ser Pro Gln  
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Gln Ala Ala Gly  
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 35 40 45

Val Asp Phe Asp Arg Leu Leu Ala Ser Leu Gln Asp Leu Ser Glu Leu  
 50 55 60

Val Val Glu Gly Asp Thr Gln Val Thr Pro Val Pro Gly Gly Ala Arg  
 65 70 75 80

Leu Arg Thr Leu Glu Pro Ile Pro Leu Lys Leu Tyr Arg Asn Gly Ile  
 85 90 95

Met Met Phe Asp Gly Pro Phe Gln Pro Phe Tyr Asp Pro Ser Thr Gln  
 100 105 110

Arg Cys Leu Arg Asp Ile Leu Asp Gly Phe Phe Pro Ser Glu Leu Gln  
 115 120 125

Arg Leu Tyr Pro Asn Gly Val Pro Phe Lys Val Ser Asp Leu Arg Asn  
 130 135 140

Gln Val Tyr Leu Glu Asp Gly Leu Asp Pro Phe Pro Gly Glu Gly Arg  
 145 150 155 160

Val Val Gly Arg Gln Arg Met His Lys Ala Leu Asp Arg Val Glu Glu  
 165 170 175

His Pro Gly Ser Arg Met Thr Ala Glu Lys Phe Leu Asn Arg Leu Pro  
 180 185 190

Lys Phe Val Ile Arg Gln Gly Glu Val Ile Asp Ile Arg Gly Pro Ile  
 195 200 205

Arg Asp Thr Leu Gln Asn Cys Cys Pro Leu Pro Ala Arg Ile Gln Glu  
 210 215 220

Ile Val Val Glu Thr Pro Thr Leu Ala Ala Glu Arg Glu Arg Ser Gln  
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Glu Ser Pro Asn Thr Pro Ala Pro Pro Leu Ser Met Leu Arg Ile Lys  
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Ser Glu Asn Gly Glu Gln Ala Phe Leu Leu Met Met Gln Pro Asp Asn  
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Thr Ile Gly Asp Val Arg Ala Leu Leu Ala Gln Ala Arg Val Met Asp  
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Ala Ser Ala Phe Glu Ile Phe Ser Thr Phe Pro Pro Thr Leu Tyr Gln  
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Asp Asp Thr Leu Thr Leu Gln Ala Ala Gly Leu Val Pro Lys Ala Ala  
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 35 40 45

Leu Arg Ala Arg Arg Ala Pro Lys Ser Ser Leu Lys Phe Ser Pro Gly  
 50 55 60

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 Arg Gln Val Pro Ala Ser His Asp Ser Glu Leu Met Ala Phe Met Thr  
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 Arg Lys Leu Trp Asp Leu Glu Gln Gln Val Lys Ala Gln Thr Asp Glu  
 85 90 95  
 Ile Leu Ser Lys Asp Gln Lys Ile Ala Ala Leu Glu Asp Leu Val Gln  
 100 105 110  
 Thr Leu Arg Pro His Pro Ala Glu Ala Thr Leu Gln Arg Gln Glu Glu  
 115 120 125  
 Leu Glu Thr Met Cys Val Gln Leu Gln Arg Gln Val Arg Glu Met Glu  
 130 135 140  
 Arg Phe Leu Ser Asp Tyr Gly Leu Gln Trp Val Gly Glu Pro Met Asp  
 145 150 155 160  
 Gln Glu Asp Ser Glu Ser Lys Thr Val Ser Glu His Gly Glu Arg Asp  
 165 170 175  
 Trp Met Thr Ala Lys Lys Phe Trp Lys Pro Gly Asp Ser Leu Ala Pro  
 180 185 190  
 Pro Glu Val Asp Phe Asp Arg Leu Leu Ala Ser Leu Gln Asp Leu Ser  
 195 200 205  
 Glu Leu Val Val Glu Gly Asp Thr Gln Val Thr Pro Val Pro Gly Gly  
 210 215 220  
 Ala Arg Leu Arg Thr Leu Glu Pro Ile Pro Leu Lys Leu Tyr Arg Asn  
 225 230 235 240  
 Gly Ile Met Met Phe Asp Gly Pro Phe Gln Pro Phe Tyr Asp Pro Ser  
 245 250 255  
 Thr Gln Arg Cys Leu Arg Asp Ile Leu Asp Gly Phe Phe Pro Ser Glu  
 260 265 270  
 Leu Gln Arg Leu Tyr Pro Asn Gly Val Pro Phe Lys Val Ser Asp Leu  
 275 280 285  
 Arg Asn Gln Val Tyr Leu Glu Asp Gly Leu Asp Pro Phe Pro Gly Glu  
 290 295 300

Gly Arg Val Val Gly Arg Gln Arg Met His Lys Ala Leu Asp Arg Val  
305 310 315 320

Glu Glu His Pro Gly Ser Arg Met Thr Ala Glu Lys Phe Leu Asn Arg  
325 330 335

Leu Pro Lys Phe Val Ile Arg Gln Gly Glu Val Ile Asp Ile Arg Gly  
340 345 350

Pro Ile Arg Asp Thr Leu Gln Asn Cys Cys Pro Leu Pro Ala Arg Ile  
355 360 365

Gln Glu Ile Val Val Glu Thr Pro Thr Leu Ala Ala Glu Arg Glu Arg  
370 375 380

Ser Gln Glu Ser Pro Asn Thr Pro Ala Pro Pro Leu Ser Met Leu Arg  
385 390 395 400

Ile Lys Ser Glu Asn Gly Glu Gln Ala Phe Leu Leu Met Met Gln Pro  
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Asp Asn Thr Ile Gly Asp Val Arg Ala Leu Leu Ala Gln Ala Arg Val  
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Met Asp Ala Ser Ala Phe Glu Ile Phe Ser Thr Phe Pro Pro Thr Leu  
435 440 445

Tyr Gln Asp Asp Thr Leu Thr Leu Gln Ala Ala Gly Leu Val Pro Lys  
450 455 460

Ala Ala Leu Leu Leu Arg Ala Arg Arg Ala Pro Lys Ser Ser Leu Lys  
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Phe Ser Pro Gly Pro Cys Pro Gly Pro Gly Pro Gly Pro Ser Pro Gly  
485 490 495

Pro Gly Pro Gly Ser Ser Pro Cys Pro Gly Pro Ser Pro Ser Pro Gln  
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